

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Chapter 1

[AD-FRL-6149-6]

RIN 2060-AE24

Consumer and Commercial Products:  
Schedule for Regulation

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of final listing of consumer products, architectural coatings, and automobile refinish coatings for regulation under section 183(e) of the Clean Air Act (Act).

SUMMARY: This document announces the EPA's final decision to list the consumer products, architectural coatings, and automobile refinish coatings categories for regulation in the first group of consumer and commercial product categories for which regulations are mandated under section 183(e) of the Act. The final rules for these three categories are published elsewhere in today's Federal Register.

Under section 183(e) of the Act, the EPA was required to conduct a study of volatile organic compounds (VOC) emissions from the use of consumer and commercial products to assess their potential to contribute to levels of ozone that violate the national ambient air quality standards (NAAQS) for ozone, and to establish criteria for regulating VOC emissions from these products. Section 183(e) also directed the EPA to list for regulation those categories of

products that emit at least 80 percent of the VOC emissions into nonattainment areas, and to schedule those categories for regulation in four groups. Ozone is a major component of smog which causes negative health and environmental impacts when present in high concentrations at ground level.

On March 23, 1995, the EPA submitted the consumer and commercial products Report to Congress required by section 183(e) of the CAA. On March 23, 1995, the EPA also published in the Federal Register a summary of the Report to Congress along with the list of product categories and the schedule for their regulation. As stated by the EPA, the March 23, 1995 notice did not represent a final Agency action on the listing determination. The notice announced that the EPA would take comment on the listing in connection with its rulemakings on emission standards for the categories on the initial list, and that final Agency action on the listing for each product category would occur upon publication of a final regulation for that category. The EPA received comments on the section 183(e) study, the Report to Congress, and the list and schedule of consumer and commercial products for regulation in response to the three proposed section 183(e) rules for the categories of consumer products, architectural coatings, and automobile refinish coatings, and the March 23, 1995 notice. This notice presents a summary of significant public comments and the

EPA's responses. Based upon the study and the Report to Congress, the EPA has concluded that these three categories are properly within the first group of product categories for regulation.

DATES: [Insert date of publication in the FEDERAL REGISTER.]

ADDRESSES: Technical Support Document. The background information document (BID) containing the Administrator's responses to significant comments on the section 183(e) study and Report to Congress (referred to as the "183-BID") may be obtained from the docket; the United States Environmental Protection Agency Library (MD-35), Research Triangle Park, North Carolina 27711, telephone (919) 541-2777; or from the National Technical Information Services, 5285 Port Royal Road, Springfield, Virginia 22151, telephone (703) 487-4650. Please refer to "Response to Comments on Section 183(e) Study and Report to Congress." The 183-BID contains a summary of all the significant public comments made on the section 183(e) study and Report to Congress and the list and schedule for regulation as well as the Administrator's responses to the comments.

Docket. Docket No. A-94-65 contains information considered by the EPA in development of the consumer and commercial products study and the subsequent list and schedule for regulation. Comments on the section 183(e) Report to Congress (Report) and the list and schedule of

consumer product categories to be regulated were received in four different dockets: (1) the consumer and commercial product Report docket (A-94-65); (2) the architectural coatings rulemaking docket (A-92-18); (3) the consumer products rulemaking docket (A-95-40); and (4) the automobile refinishing coatings rulemaking docket (A-95-18). The dockets are available for public inspection and copying from 8:00 a.m. to 5:30 p.m., Monday through Friday, excluding legal holidays. The dockets are located at the EPA's Air and Radiation Docket and Information Center, Waterside Mall, Room M1500, 1st Floor, 401 M Street SW, Washington, DC 20460; telephone (202) 260-7546 or fax (202) 260-4400. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Mr. Bruce Moore at (919) 541-5460, Coatings and Consumer Products Group, Emission Standards Division (MD-13), United States Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

SUPPLEMENTARY INFORMATION:

Regulated Entities. Entities potentially affected by this action are manufacturers and distributors of consumer products, manufacturers and importers of architectural coatings, and manufacturers and importers of automobile refinish coatings or their components. Regulated categories and entities include:

Category	Examples of regulated entities
Industry	Manufacturers or distributors of consumer products. Manufacturers, packagers, repackagers, or importers of architectural coatings. Manufacturers or importers of automobile refinishing coatings or their components.
State/local/tribal governments	State Agencies that manufacture their own consumer products or coatings.

This table is not intended to be exhaustive, but rather to provide a guide for readers regarding entities likely to be interested in this action. This table lists the types of entities that the EPA is now aware could potentially be interested in this action. Other types of entities not listed in the table could also be interested. For additional information on applicability of these rules, please see the final rules published elsewhere in this Federal Register for these three categories of products. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding FOR FURTHER INFORMATION CONTACT section of this preamble.

Judicial review. The initial listing of product categories and schedule for regulation was published on

March 23, 1995 (60 FR 15264). This document announces the EPA's final decision to list consumer products, architectural coatings, and autobody refinishing categories for regulation under the first group of consumer and commercial product categories for which regulations are mandated under section 183(e) of the Act. Under section 307(b)(1) of the Act, judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit by [insert date 60 days after date of publication in the FEDERAL REGISTER]. Under section 307(d)(7)(B) of the Act, only an objection to this action which was raised with reasonable specificity during the period for public comment can be raised during judicial review. Moreover, under section 307(b)(2) of the Act, the requirements established by today's final action may not be challenged separately in any civil or criminal proceeding brought by the EPA to enforce these requirements.

Technology Transfer Network. The Technology Transfer Network (TTN) provides information and technology exchange in various areas of air pollution control, including copies of the Report to Congress, all the proposed and final actions under section 183(e), and supporting documents. The TTN is free and is accessible through the Internet at "<http://www.epa.gov/ttn/oarpg/ramain.html>." For more

information on the TTN, call the HELP line at (919) 541-5384.

Outline. The information presented in this preamble is organized as follows:

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I. Background.

A. Purpose of regulation.

Ground-level ozone, which is a major component of "smog," is formed in the atmosphere by reactions of VOC and oxides of nitrogen ( $\text{NO}_x$ ) in the presence of sunlight. The formation of ground-level ozone is a complex process that is affected by many variables.

Exposure to ground-level ozone is associated with a wide variety of human health effects, agricultural crop loss, and damage to forests and ecosystems. Acute health effects are induced by short-term exposures to ozone (observed at concentrations as low as 0.12 parts per million (ppm)), generally while individuals are engaged in moderate or heavy exertion, and by prolonged exposures to ozone (observed at concentrations as low as 0.08 ppm), typically while individuals are engaged in moderate exertion. Moderate exertion levels are more frequently experienced by individuals than heavy exertion levels. The acute health effects include respiratory symptoms, effects on exercise performance, increased airway responsiveness, increased susceptibility to respiratory infection, increased hospital admissions and emergency room visits, and pulmonary inflammation. Groups at increased risk of experiencing such

effects include active children, outdoor workers, and others who regularly engage in outdoor activities and individuals with preexisting respiratory disease. Currently available information also suggests that long-term exposures to ozone may cause chronic health effects (e.g., structural damage to lung tissue and accelerated decline in baseline lung function).

In accordance with section 183(e) of the Act, the Administrator has determined that VOC emissions from the use of consumer products, architectural coatings, and automobile refinishing coatings have the potential to contribute to ozone levels that violate the NAAQS for ozone. Under authority of section 183(e), the EPA conducted a study of the VOC emissions from consumer and commercial products to determine their potential to contribute to ozone levels which violate the NAAQS for ozone. Based on the results of the study, the EPA determined that these categories of consumer products account for about 30 percent of the emissions from all consumer and commercial products. The EPA's determination that VOC emissions from the use of these categories of consumer and commercial products have the potential to contribute to nonattainment of the ozone NAAQS and the decisions to regulate these categories were discussed in the preambles to the proposed rules (61 FR 4531; 61 FR 19005; 61 FR 32729), in the Report to

Congress on Consumer and Commercial Products (EPA 453/R-94-066A), and in the Federal Register document announcing the schedule for regulation (60 FR 15264).

B. Section 183(e) of the Act.

Section 183(e) of the Act mandates a new regulatory program for controlling VOC emissions. Through this provision, Congress required the EPA to conduct a study of emissions of VOC into the ambient air from consumer and commercial products and to list for regulation, based on the study, certain categories of products that have the potential to contribute to ozone nonattainment.

The term "consumer and commercial products" is defined in section 183(e) of the Act to mean:

...any substance, product (including paints, coatings, and solvents), or article (including any containers or packaging) held by any person, the use, consumption, storage, disposal, destruction, or decomposition of which may result in the release of volatile organic compounds.

The statutory definition of consumer and commercial products thus includes a much broader array of products than those usually considered to be consumer products (e.g., personal care products, household cleaning products, or household pesticides) because it encompasses all VOC-emitting products used in the home, by businesses, and by institutions.

The stated objectives of the consumer and commercial products study mandated in section 183(e) of the Act were:

(1) to determine the potential of VOC emissions from consumer and commercial products to contribute to ozone levels which violate the ozone NAAQS; and (2) to establish criteria for regulating consumer and commercial products. In establishing criteria for regulating products, the Act required the Administrator to consider the following five factors: (1) the uses, benefits, and commercial demand of products; (2) the health or safety functions served by such products; (3) whether products emit highly reactive VOC into the ambient air; (4) the relative cost-effectiveness of controls for products; and (5) the availability of alternative products which are of comparable costs, considering health, safety, and environmental impacts.

Upon completion of the study, section 183(e) required the EPA to submit a report to Congress documenting the results of the study. The Act further required the EPA to list those categories of products that it determined, based on the study, account for at least 80 percent of the total VOC emissions, on a reactivity-adjusted basis, from consumer and commercial products in areas that violate the ozone NAAQS. In addition, section 183(e) required the EPA to divide the list of products into four groups establishing priority for regulation. Every 2 years following publication of the list, the EPA is required to regulate one group of categories until all four groups are regulated.

C. Publication of the list and schedule for regulation.

In March 1995, the EPA submitted the consumer and commercial products Report to Congress required by section 183(e) of the Act. A summary of the 6-volume report (EPA-453/R-94-066-a through f) was published in the Federal Register on March 23, 1995 (60 FR 15264). In the same document, the list of products and the schedule for their regulation was published (60 FR 15267). Consumer products, architectural coatings, and autobody refinishing were included in Group 1 of the schedule for which the Act requires the EPA to promulgate regulations within 2 years of publication of the Report to Congress (i.e., by March 1997). The March 23, 1995 document stated that the list and schedule for regulation were not final EPA actions. As stated in the March 23 document:

Although today's document identifies consumer and commercial products that potentially could be regulated, this list and schedule may be amended as further information becomes available or is submitted to the EPA. The public will have an opportunity to comment on the listing and possible regulation of a particular product at the time the EPA proposes to regulate that particular product. Thus, today's action does not represent final Agency action. Final Agency action occurs upon publication of a final regulation for each product.

Although not requested, the EPA received some public comments in response to the preliminary listing document (60 FR 15264). These comments were placed in a docket

(A-94-65). However, because the EPA intended the list and schedule to be an interim step in the development of regulations rather than final EPA action, the EPA held no public hearing on the Report to Congress and the listing and schedule, and prepared no responses to the comments at that time. Instead, the EPA requested that the public submit comments on the section 183(e) list and schedule resulting from the study at the time of proposal of regulations for each particular consumer and commercial product category.

Final regulations are being published today for the consumer products, architectural coatings, and autobody refinishing categories. In developing these regulations, the EPA has taken into account all of the public comments received on the criteria for listing and regulating these categories, including comments submitted on the March 23, 1995 document. Thus, today's action represents a final EPA listing action on these three categories.

D. Regulatory criteria and ranking of product categories.

As directed in section 183(e)(2)(B) of the Act, the EPA utilized the five factors in the statute to develop the following eight criteria for use in establishing the list of consumer and commercial product categories to be regulated:

- (1) Utility,
- (2) commercial demand,

- (3) health and safety functions,
- (4) emissions of highly reactive VOC,
- (5) availability of alternatives,
- (6) cost-effectiveness of controls,
- (7) magnitude of annual VOC emissions, and
- (8) regulatory efficiency and program considerations.

The first factor (uses, benefits, and commercial demand of products) stipulated by section 183(e) is reflected in two criteria developed by the EPA. Criterion 1 (utility) considers uses and benefits and Criterion 2 addresses commercial demand. The remaining four factors stipulated in section 183(e) are addressed individually by Criteria 3 through 6.

Criteria 7 and 8 (magnitude of emissions and regulatory efficiency) reflect additional considerations not specifically prescribed in the Act. The EPA has exercised its discretion to include these criteria, because the EPA concluded that they are important in prioritizing product categories for regulation in a manner that best effectuates Congress's intent under section 183(e). The EPA's interpretation of each of the five factors and the rationale and intent of each of the eight criteria are discussed in detail in the section 183(e) Report to Congress.

The EPA developed Criteria 1 through 7 to allow each product category to be ranked numerically. The numerical

ranking process involved objective and subjective considerations. Criteria 2, 4, 6, and 7 are objective in nature and could be scored quantitatively based on annual sales, VOC emissions, and cost of control. Application of Criteria 1, 3, and 5 included some subjective considerations. Scoring of these criteria could be affected by the scorer's background, knowledge of the category, or other considerations. In order to ensure consistency and fairness, the EPA convened the National Air Pollution Control Techniques Advisory Committee (NAPCTAC) to assist the EPA in application of these criteria. Because of the balance afforded by the diversity of the NAPCTAC membership, the EPA concluded that it was an appropriate and convenient choice. The NAPCTAC met in July 1994 in Durham, North Carolina, to assign preliminary scores for Criteria 1 through 7 to each of the product categories. Results of the preliminary scoring exercise are available in the docket (A-95-40). The EPA used NAPCTAC to provide expert advice on the question of product ranking, but exercised its own independent judgment to assign the final ranking of products for regulation.

Once the initial ranking of products based on exercise of Criteria 1 through 7 was completed, the EPA applied Criterion 8, regulatory efficiency and program considerations, to prioritize the products in the schedule

for regulation, and thereby identify which product categories comprised at least 80 percent of VOC emissions in nonattainment areas. As required by section 183(e) of the Act, the EPA grouped the listed categories of consumer and commercial products into four groups for regulation in 2-year intervals. Although the statute does not require that the list be divided into 4 equal groups, the EPA placed product categories into the 4 groups as equally as possible with the goal of achieving VOC emissions reductions as early as possible given available EPA resources. Thus, nearly two-thirds of the cumulative emissions from consumer and commercial products result from products in the first two groups of categories.

## II. Significant Comments on Section 183(e) Study and Report to Congress.

The EPA received 85 letters commenting on the section 183(e) Report to Congress and the regulatory list and schedule. These letters were submitted as part of comments on the three rules discussed in this action as well as comment on the Report to Congress. In addition, a total of 12 people testified about the listing of consumer and commercial products at three public hearings for the three rules being published today. The EPA has carefully considered all these comments in publishing today's final listing. The 183-BID, which is referenced in the ADDRESSES

section of this preamble, contains full responses to each significant issue raised by commenters. A summary of the more significant comments and the EPA's responses to them are presented here.

Approximately half of the comments received on the section 183(e) list and regulatory schedule were submitted by a consortium of architectural coating manufacturers, including a regional firm and a number of smaller manufacturers. For purposes of clarity and simplicity of language, the following discussion refers to these commenters collectively as "the consortium." These companies dispute the EPA's basis for the architectural coatings rule being promulgated today in a separate Federal Register document. By contrast, a national paint and coatings association that represents approximately 225 companies of all sizes strongly supports promulgation of the architectural coatings rule.

Many of the individual comment letters from the consortium addressed several different issues, and many of these issues were raised by all of these parties. In addition, the comments were submitted to the EPA over several years, beginning before proposal of the three rules addressed in this action and extending throughout the respective comment periods and beyond. Over time, the arguments posed were repeated and expanded. Moreover, many

of the comments are interrelated in terms of technical issues and policy implications. Therefore, the EPA decided to consolidate and combine the comments from these parties so as to present them and respond to them in an organized manner.

A. Legitimacy of the Environmental Protection Agency's section 183(e) study.

Some commenters contended that the EPA failed to perform a proper study as mandated by the Act and that the EPA, therefore, lacks authority to propose regulations under section 183(e) of the Act until it conducts a proper study. The primary alleged deficiencies suggested by these commenters are that: (1) the EPA did not perform speciated reactivity studies of all VOC in consumer and commercial products; (2) the EPA failed to demonstrate that consumer and commercial products have the potential to contribute to ozone nonattainment; and (3) the EPA considered VOC emissions magnitude and regulatory efficiency, which was allegedly contrary to Congressional intent. Three other commenters testified that the EPA had fulfilled all necessary requirements of section 183(e) of the Act. These commenters agreed with the EPA's efforts in the section 183(e) study and Report to Congress.

These comments are summarized and addressed in the following sections.

1. Reactivity.

The consortium claimed that the EPA failed to conduct a speciated relative reactivity study of all consumer and commercial product VOC and that such a study was mandated by section 183(e)(2)(A) of the Act. The consortium argued that the lack of a relative reactivity study precludes the EPA from determining which, if any, VOC from consumer and commercial products are logical targets for regulation. The consortium also disagreed with the EPA's conclusion that it was impossible to perform reactivity studies on all individual consumer and commercial product ingredients within the time frame allowed by Congress and the EPA's available budget. The consortium contended that the EPA could have developed a more effective regulatory program based on substitution of lower reactivity VOC for higher reactivity VOC if additional reactivity studies had been undertaken.

Another commenter, however, believed that the EPA met the requirements of section 183(e) of the Act regarding the consideration of reactivity, and noted what was included in the section 183(e) Report to Congress with respect to reactivity.

In response to these comments, the EPA believes that it has met all reactivity-related requirements of section 183(e) of the Act, and that relative reactivity was taken

into account to the extent that currently available scientific data and understanding allow. As required in section 183(e), the EPA considered reactivity in prioritizing and selecting product categories to be listed for regulation. The EPA disagrees that a speciated study of all consumer and commercial product VOC should have been performed; such a study is not required by the Act and would have been impractical to undertake. The EPA's analysis of the state of knowledge regarding reactivity and use of available reactivity data allowed the EPA to fulfill the requirements of the Act and to complete the mandated study and Report to Congress. Finally, currently available speciated reactivity data are not adequate to support the suggested regulations based on substitution of lower reactivity VOC for higher reactivity VOC. An analysis of whether such a system would result in more efficient regulation would need to consider all costs associated with implementing a speciated regulatory system (e.g., monitoring and recordkeeping). Also, it would be necessary to consider the ability of compounds to form ozone over a several-day period under different sets of environmental conditions in designing such an approach and considering its efficiency.

Consideration of reactivity in prioritizing product categories for possible regulation.

Section 183(e)(2)(B)(iii) of the Act requires the EPA to

consider five factors in establishing criteria for selecting product categories to be regulated. One factor is "those consumer and commercial products which emit highly reactive volatile organic compounds (VOC) into the ambient air." Accordingly, the EPA established "Emissions of Highly Reactive Compounds" as one of the criteria used to rank consumer and commercial products for possible regulation.

In its consumer and commercial products study, the EPA distinguished between three groups of compounds: highly reactive, reactive, and negligibly reactive. Negligibly reactive compounds, a category established by the EPA regulations, are certain listed compounds the EPA has formally determined to have insignificant ozone-forming potential and excluded from the definition of VOC. Compounds that were identified as negligibly reactive were excluded from the consumer and commercial product VOC emissions inventory, and will be excluded from any related regulation.

To identify highly reactive VOC, the EPA used available information to identify 10 classes of volatile organic compounds--some of which represent very broad groups--as "highly reactive" under most conditions. In the study the EPA thus differentiated among classes of VOCs that were known to be reactive and those that were known to be highly reactive, using the most current, generally accepted

reactivity scales. The EPA then identified those product categories known to contain quantities of these highly reactive compounds, and estimated the quantity of highly reactive compounds emitted by these product categories.

The EPA also took into consideration highly reactive VOC under another criterion, "Magnitude of Annual VOC Emissions." For product categories known to contain highly reactive VOC, the EPA adjusted the mass emissions figures for those VOC to reflect their high reactivity.

The EPA subsequently ranked product categories for possible regulation, considering the criteria established by the EPA and advice from the independent NAPCTAC advisory group. In conducting the ranking, the EPA gave product categories containing highly reactive compounds a higher priority for regulation. In addressing the two criteria cited above, the EPA assigned a range of scores based on the number of tons of highly reactive VOCs emitted per year by a product category. The EPA included the scores from these criteria in the calculation of the total scores for each product category in considering the regulatory priority of each category.

Chapter 3 of the March 1995 Report to Congress provides a more detailed discussion of reactivity and the rationale for the list of highly reactive compounds on which the EPA

relied. Chapter 4 of the Report to Congress discusses in more detail how the EPA applied each of the criteria.

Adjustment for reactivity in listing product categories. Section 183(e)(3)(A) of the Act requires the EPA to "list those categories of consumer or commercial products that the Administrator determines, based on the study, account for at least 80 percent of the VOC emissions, on a reactivity-adjusted basis, from consumer or commercial products in areas that violate the NAAQS for ozone." The EPA fulfilled the reactivity adjustment requirement in the following manner. As previously noted, the EPA grouped all VOC into three divisions - highly reactive, reactive, and negligibly reactive. The EPA identified those product categories known to contain highly reactive compounds and estimated the mass quantity of these compounds found in each category. The EPA adjusted emissions data for these product categories by applying a reactivity adjustment factor to the mass emissions of highly reactive ingredients. Compounds that were identified as negligibly reactive, which are not within the definition of VOC, were excluded from the emission inventory. After ranking the product categories based on the eight regulatory criteria, the EPA developed the list of categories for regulation starting with the highest ranked categories and proceeding through successive categories until 80 percent of the total emissions--

including the aforementioned adjustments for reactivity-- was accounted for. In this way, the EPA, fulfilled the reactivity adjustment requirement of section 183(e)(3)(A) of the Act.

Additional study was not required. The statutory requirements regarding reactivity are clearly stated in the Act. They are:

1. to consider consumer and commercial products that emit highly reactive VOC, and
2. to list those products that account for at least 80 percent of VOC emissions from consumer and commercial products in non-attainment areas, on a reactivity-adjusted basis.

The EPA believes that the Act does not require the speciated reactivity study suggested by the commenters. Nor does the Act include any requirements for the EPA to fill gaps in scientific understanding before proceeding with prioritizing and listing categories for regulation. The Act's language regarding a study requires the EPA to address "emissions of volatile organic compounds into the ambient air from consumer and commercial products..." The EPA considered reactivity a significant issue in this study and assessed all reasonably available reliable data on reactivity of individual VOC species. The EPA does not believe that it was required to delay its listing decisions

until it could conduct extensive research to quantify the reactivity of each VOC species.

To meet these requirements, the EPA ascertained which consumer and commercial products have the potential to contribute to ozone nonattainment and took reactivity into consideration to the extent that reasonably available information allows. As described in the preceding section, the EPA's study of relative reactivity included assessment of currently available data and ozone formation models. Furthermore, since the study and Report to Congress were, in essence, a screening exercise to identify the EPA's priorities for regulating categories of consumer and commercial products, the EPA judged that the consideration of relative reactivity should be limited to currently available data and should not involve exhaustive testing of relative reactivity of all consumer and commercial products. The EPA does not believe that Congress could have intended to delay regulation of VOC emissions from consumer and commercial products indefinitely, pending development of complete information regarding reactivity for all individual species of VOC. As more complete information on the relative reactivity of consumer and commercial product VOC is developed over time, the EPA can incorporate it into the regulatory program. For example, if data become available to prove that a currently regulated VOC is negligibly

reactive, the EPA will exempt that compound from the regulatory definition of VOC.

Impracticality of additional study. Some consortium members claim that the EPA should have attempted in the section 183(e) study to conduct a quantitative analysis of the relative reactivity of each of the thousands of VOC species in consumer and commercial products. Such a detailed, costly, and time-consuming analysis is not needed to justify listing of product categories for regulation and is not required by the statute. The effect of such a requirement would be to postpone for years promulgation of pollution control requirements needed to help the Nation achieve clean air. This would be inconsistent with Congress's direction that the EPA complete the study within three years and expeditiously issue regulations for consumer and commercial products within deadlines set in the statute.

Even if the EPA could have determined reactivity values for the extremely large number of compounds in consumer and commercial products, the results would be of limited utility. Available computer models generally aggregate chemical compounds or consider them as general categories. As a result, models have limited use for evaluating the effects of reducing emissions of specific VOC species from a particular product category.

2. Role of consumer and commercial products in contributing to ozone nonattainment.

The consortium also argued that the EPA's section 183(e) study failed to determine the potential of VOC emissions from consumer and commercial products to contribute to ozone levels that violate the ozone NAAQS. Their argument included points that the EPA should have determined the reactivity of each species of VOC and should have done a detailed study of the role of other factors, including the role of NO<sub>x</sub> and biogenic emissions in ozone formation. In addition, the consortium asserted that the EPA should have determined which products and control strategies have the greatest ozone reduction potential in each individual nonattainment area and related the estimated cost of any proposed regulations to the amount of ozone reduced. As a result of these exercises, the consortium claimed the EPA would have listed for regulation only those products that have the greatest effect on ozone reduction for the least cost.

The EPA disagrees with the consortium that these studies are needed for proper implementation of the section 183(e) program, and disagrees that section 183(e) of the Act directs the EPA to undertake such a detailed level of analysis. The statutory mandate is to study the "emissions of VOC from consumer and commercial products...

in order to determine their potential to contribute to ozone levels which violate the NAAQS for ozone."

The EPA has concluded that VOC emissions from consumer and commercial products have the potential to contribute to ozone nonattainment, based on the section 183(e) study and a large body of scientific knowledge on photochemical reactivity and the role of VOC in ozone formation.

The EPA is not alone in its assessment. A 1989 report by the Congressional Office of Technology Assessment, "Catching Our Breath: Next Steps for Reducing Urban Ozone," identified VOC emissions from solvents in paints and coatings, and from other types of products, as a significant contributor to the ozone pollution problem that had largely escaped regulation at the federal level. Several States have moved on their own to limit VOC emissions from paints and coatings because they contribute to ozone pollution. The National Governors' Association and Environmental Council of States, and the associations representing State and local air program administrators, have called upon the EPA to expedite adoption of national rules for architectural coatings and other consumer and commercial products. Further, in June 1997, the 37-State Ozone Transport Assessment Group (OTAG) recommended that the EPA proceed with finalizing the proposed national rules for architectural coatings, consumer products, and automobile

refinish coatings, and even develop more stringent future requirements for these categories.

The following considerations and scientific studies are among those supporting the EPA's position that the VOC in consumer and commercial products have the potential to contribute to the ozone pollution problem:

(i) Ozone pollution is caused by the reaction of VOC and NO<sub>x</sub>. All VOC species have the potential to form ozone (i.e., are reactive) to some degree. Since the late 1940s, the scientific community has recognized this basic tenet of atmospheric chemistry. For example, the 1996 EPA document entitled "Air Quality Criteria for Ozone and Related Photochemical Oxidants" and its 1970 and 1977 predecessors include discussions of the atmospheric chemistry leading to formation of ozone and the important role of VOC in that formation. These documents have been extensively reviewed by independent scientific experts on the Clean Air Scientific Advisory Committee.

(ii) The EPA's consumer and commercial products study includes a broad inventory of VOC emissions from consumer and commercial products. The study showed that emissions from consumer and commercial products in 1990 were large--an estimated 28 percent (6 million tons per year) of total manmade VOC emissions nationwide. In ozone nonattainment areas, these emissions in 1990 totaled 3.3 million tons per

year (tpy). These totals consist of contributions from a large number of individual pollution sources that are relatively small.

Architectural coatings--the category of principal interest to consortium members--are one of the largest identifiable unregulated sources of VOC in many States' emissions inventories, and one of the largest sources of VOC emissions among categories of consumer and commercial products. The EPA's section 183(e) study estimated nonattainment area emissions from this category at 315,000 tpy in 1990.

(iii) Both the amount of VOC emitted, and the reactivity of the VOC (which is dependent on ambient conditions that vary at different times and places), affect the amount of ozone formed. It is important to note that low-reactivity VOC can still be significant ozone producers if they occur at high concentrations and under favorable conditions. This is documented, for example, in a 1991 article by R.G. Derwent and M.E. Jenkin, "Hydrocarbons and the Long Range Transport of Ozone and PAN Across Europe," in Atmospheric Environment (25A, p.1661) and in the most recent "National Air Quality and Emissions Trends Report, 1996," (EPA-454/R-97-013).

This point concerning low-reactivity VOC also is supported by empirical data from this country. The most recent "National Air Quality and Emissions Trends Report, 1996," (EPA-454/R-97-013), suggests that reducing low-reactivity VOC emissions from gasoline was effective in reducing national ozone levels. The report shows that national VOC emissions decreased 9 percent from 1987 to 1991, while national composite ozone levels decreased approximately 8 percent. A closer look at the VOC reductions over this period shows that they are primarily due to reductions in the transportation category, and this is due in large part to reductions in the vapor pressure of gasoline (Reid vapor pressure, or RVP) which were implemented nationally in 1989 and 1990. These RVP reductions are primarily achieved by reducing the content of short-chain hydrocarbons in gasoline. While these compounds are generally considered of lesser importance in the formation of ozone than their more highly-reactive hydrocarbon counterparts, their reduction seems to have been very effective in the reduction of ozone levels nationally between 1987 and 1991. This is an example of how the control of certain VOC emissions which are considered less reactive than other VOC emissions in isolation can, nonetheless, be effective in significantly reducing levels of ozone pollution. In any case, it has long been apparent

that these "less reactive" VOC emissions (such as those which can be found in many paint solvent formulations) cannot be ignored when considering the need to control VOC to reduce ozone pollution.

(iv) It has been well documented that both VOC and NOx control are needed to combat the national ozone problem. This point is further discussed elsewhere in this preamble.

The EPA is continuing to support research on atmospheric chemistry, including photochemical reactivity, to further improve models for predicting ozone formation. In the meantime, the EPA believes that there is ample scientific evidence that VOC emissions from consumer and commercial products have the potential to contribute to ozone nonattainment.

In the consumer and commercial products study, the EPA studied two indicators of a product category's relative potential to form ozone. These indicators, which the EPA identified as two of the criteria to be used in listing product categories for regulation, were (1) the quantity of VOC emissions (adjusted for highly reactive emissions), and (2) the quantity of highly reactive emissions. In the study, the EPA determined the quantity of VOC emissions from each product category and created a comprehensive VOC emissions inventory for consumer and commercial products. In addition, using available data, the EPA identified

classes of highly reactive VOC and determined the quantities of those compounds emitted by each product category.

The EPA subsequently considered both of these criteria in prioritizing and listing product categories for regulation. As detailed elsewhere in this preamble, product categories that had greater emissions of VOCs, or greater emissions of highly reactive VOCs, received higher priority scores on those two criteria and, therefore, were more likely to be listed for regulation.

In other words, the EPA studied indicators of product categories' relative potential to form ozone in conducting the consumer and commercial products study, and considered those indicators in prioritizing and listing product categories for regulation.

Some consortium members claim that the EPA should have attempted in the section 183(e) study to conduct a quantitative analysis of the amount of ozone formed by each of the thousands of VOC species in consumer and commercial products, for each product, in each airshed or nonattainment area--and do so for a range of control strategies. The Act does not require the EPA to establish quantitatively the contribution of each product to ozone nonattainment prior to listing. As previously noted, such a detailed, costly, and time-consuming analysis is not needed to justify the listing

of product categories for regulation. The effect of such a requirement would be to postpone for years promulgation of pollution control requirements needed to help the Nation achieve clean air. This would be inconsistent with Congress's direction that the EPA complete the study within 3 years and expeditiously issue regulations for consumer and commercial products within deadlines set in the statute.

In this context, it is relevant to note that the types of VOC in consumer and commercial products are not unique--these same VOC are among the pollutants emitted by major industrial facilities. Consumer and commercial products are made from VOC-containing chemical feed stocks made at chemical manufacturing plants and refineries, for which VOC emission control regulations are comprehensive and stringent.

Other reasons that the extremely detailed analysis suggested was not feasible or appropriate involve data limitations and scientific complexities and uncertainties. Such an analysis would require, for example, substantial additional data on the types and quantities of individual VOC in each product within the broad universe of consumer and commercial products. To obtain this information would have placed an additional burden upon industries that the EPA believes was not necessary for the listing process. Also, studies to quantify the reactivity of a large number

of individual VOC species would have been required for this analysis. In addition, many complexities make it difficult to make reliable predictions of the ozone-forming potential of individual VOC species. One reason is that this potential varies depending on ambient conditions--on an absolute scale, and occasionally on a relative scale as well. These conditions affecting reactivity include ambient conditions such as VOC-to-NOx ratios, the presence of other VOC, and sunlight intensity. Each of these factors can vary widely. Also, in multiple day pollution episodes in an area, a VOC species that has low reactivity (based on a one-day reactivity scale) may continue to form ozone over several days. Even if the EPA could have obtained the needed data and accounted for these complications, the results would have been of limited utility. As mentioned previously, available computer models generally aggregate chemical compounds or consider them as general categories. As a result, models have limited use for evaluating the effects of reducing emissions of specific VOC species from a particular product category.

Finally, the EPA believes that an intensive study to quantify each product's effect on ozone levels in nonattainment areas is inconsistent with Congress's intent in enacting the section 183(e) program. Congress recognized that small quantities of VOC emissions from a very large

number of products add up--and together make up a significant portion of ozone-forming VOC emissions. Congress created the 183(e) program to reduce the VOC emissions from consumer and commercial products as a group. Under section 183(e), it is not necessary to quantify the effect of each species of VOC, or each product, on ozone levels in each nonattainment area to make a reasoned selection of product categories to list for regulation.

The EPA has procedures available for considering evidence that a particular compound is not reactive enough to warrant regulation as an ozone precursor under the Act. Existing EPA regulations allow persons or companies to apply to have a compound excluded from the definition of VOC--in effect, exempted from regulation--based on evidence that it is negligibly reactive. (See 40 CFR 51.100(s).) Working with industry, the EPA has exempted 42 compounds and two classes of compounds under this provision; 21 exemptions have been granted since 1990.

In summary, the EPA believes that the potential for the listed categories of products to contribute to ozone nonattainment has been established in accordance with the requirements of section 183(e).

3. Consideration of "emission magnitude" and "regulatory efficiency."

The consortium contended that the EPA lacked authority to use the "emission magnitude" and the "regulatory efficiency and program considerations" criteria because they do not directly reflect any of the five factors listed in section 183(e)(2)(B) of the Act. For this reason the consortium concluded that any EPA action relying on these criteria is illegal and invalid.

Although the Act requires that the EPA consider the five factors enumerated in section 183(e)(2)(B) of the Act in establishing criteria for regulating products, the statute does not require that the EPA establish criteria that precisely mirror the five factors, nor does it require that the EPA consider the list of factors to be exclusive. The EPA fulfilled its duty to establish criteria and to consider each of the five listed factors in developing the criteria. In addition, the EPA exercised its discretion by establishing two criteria that did not specifically mirror the five listed factors. The EPA believes these two criteria are important for the purposes of establishing priorities for regulation as instructed by Congress.

The EPA established Criterion 7, Magnitude of Annual VOC Emissions, to give greater regulatory priority to products that emit relatively large amounts of VOC.

Magnitude of annual VOC emissions is a reasonable criterion for determining which product categories to regulate. It is logical to take into consideration how much VOC product categories emit relative to other products because the greater the emissions from a category, the greater the potential to achieve significant emission reductions and the corresponding reduction in ozone concentrations in areas violating the ozone standard.

The EPA established Criterion 8, Regulatory Efficiency and Program Considerations, to assure that the EPA continues to use resources in the most effective manner to meet the mandates of section 183(e) of the Act. It is reasonable for the EPA to consider whether a given product category has already been the subject of State, local, or Federal regulations. Such categories would have been well-characterized, alternatives of control would have been explored, and costs and economic impacts would have been investigated. The EPA believes it is also reasonable to consider the existence of this information because the EPA must regulate the first group of products in a relatively short time. The EPA carries out all of its activities mandated by the Act within budgetary and time constraints. It is the EPA's policy to focus regulatory activities so as to optimize the use of time and resources. Section

183(e)(2)(B) does not prohibit the EPA from considering this factor.

B. Consumer and commercial product inventory.

The consortium expressed the opinion that consumer and commercial products are not a significant VOC source. According to the consortium, many consumer and commercial products, such as architectural coatings, would not be listed for regulation had the EPA performed the inventory correctly, because such products may not be in the top 80 percent of consumer and commercial product emissions on a reactivity-adjusted basis. The consortium listed two alleged deficiencies with the consumer and commercial product inventory. First, the EPA's overall inventory did not include biogenic VOC. Second, the EPA excluded certain man-controlled biogenic VOC sources, such as plant nurseries and orchards, from the list of consumer and commercial products to be regulated.

1. Role of biogenic emissions.

The consortium stated that a major deficiency existed in the consumer and commercial product inventory because the EPA failed to provide Congress with information about the insignificance of VOC from consumer and commercial products relative to the larger amount of biogenic VOC in the atmosphere. According to the consortium, the EPA's failure to list the specific sources of all VOC, including those

from the global background, biogenic, and anthropogenic sources, along with the role that each source played in ozone formation, resulted in Congress being uninformed of the supposed insignificance of anthropogenic emissions compared to biogenic emissions.

The EPA believes that the inclusion of biogenic emissions in the inventory of national VOC emission sources is one possible approach, but does not believe that such inclusion changes the proper analysis for controlling VOC from consumer and commercial products. The EPA estimated biogenic emissions in 1990 to be about 34 million tpy. Considering the 21 million tons of anthropogenic emissions, total VOC emissions nationwide are greater than 56 million tpy. For the purpose of determining relative contribution of consumer and commercial products, the EPA revised the inventory of all VOC sources to include biogenic emissions and included the revised table in the section 183(e) comment response document. These biogenic emissions are not amenable to control, because they emanate from sources for which there is no practical control option (i.e., forests, swamps, grasslands, etc.); therefore, the proportion of controllable VOC has remained unchanged. Of the 21 million tons of anthropogenic VOC emissions emitted nationwide in 1990, consumer and commercial products account for 6 million tons, or about 28 percent. Therefore, consumer and

commercial products are still among the most significant Federally unregulated VOC sources for which additional VOC reductions are achievable.

Consumer and commercial product VOC contribute to ozone formation regardless of the precise amount of biogenic VOC in the inventory. In some regions of the country, biogenic VOC contribute significantly to ozone nonattainment. In other areas, biogenic VOC are emitted in the presence of limited amounts of  $\text{NO}_x$ , resulting in a limited amount of ozone formation. Moreover, under the right conditions, biogenic VOC tends to scavenge ozone from polluted air as well as form new ozone. Anthropogenic VOC, on the other hand, are usually emitted in the presence of  $\text{NO}_x$ , resulting in rapid ozone formation and are generally unreactive with ozone under most conditions. For these reasons, anthropogenic VOC contribute to ozone nonattainment in urban areas and other locations, regardless of any concomitant contribution by biogenic sources. Thus, VOC emissions from anthropogenic sources will play a proportionately greater role in ozone formation than is indicated by their percentage contribution to total national emissions. The EPA concluded that the existence of biogenic VOC does not negate the fact that VOC from consumer and commercial products have the potential to contribute to ozone nonattainment as contemplated by section 183(e) of the Act.

## 2. Listing of biogenic products.

The consortium argued that a second deficiency in the consumer and commercial product inventory and list for regulation was that the EPA excluded man-controlled biogenic sources (i.e., flowers, trees, food, etc.). The consortium argued that this exclusion is contrary to the Act, which required the EPA to conduct a complete inventory of all sources of VOC emissions from consumer and commercial products. The consortium stated that these biogenic sources, if included in the study, would have been a more significant source of VOC contribution to ozone than some of the consumer and commercial products that the EPA listed for regulation.

The EPA disagrees that biogenic products should be listed as categories of consumer and commercial products. It is reasonable to list only those products from which emission reductions are possible. In general, the EPA has interpreted the statutory definition of consumer and commercial products very broadly, and considers products ranging from hair sprays to automotive coatings to asphalt paving materials to fall within the definition of consumer and commercial products. These "products" differ greatly from man-controlled biogenic sources of VOC.

In each of the categories identified by the EPA to be consumer and commercial products for regulation, the

products share at least one characteristic that sets them apart from biogenic sources. In every case, the "products" are formulated and manufactured using combinations of ingredients. The manufacturers have control over the VOC contents of these products, and, therefore, can reformulate or modify the products to emit less VOC. Plants, trees, and shrubs are not manufactured and, therefore, have inherent VOC emission characteristics, both in volume and speciation of emissions. These naturally occurring sources cannot be reformulated or modified to reduce VOC emissions. Options to control VOC emissions from plants, trees, and shrubs would be limited primarily to banning sale or distribution of such products which the EPA believes would not reflect Congress's intent in enacting Section 183(e).

The VOC emissions from biogenic sources could not be mitigated through regulation; therefore, it is highly unlikely that these sources would ever be listed for regulation. Consequently, the EPA's decision not to identify these sources as consumer and commercial products under section 183(e) of the Act has not affected the selection of nor the priorities for those categories the EPA did list for regulation.

C. The Environmental Protection Agency's regulatory strategy.

1. Nitrogen oxides versus volatile organic compounds emissions control strategies. As part of their comments opposing the EPA's approach to the section 183(e) study and Report to Congress, the consortium submitted a series of letters presenting a number of different arguments that the EPA is using the wrong regulatory policy for attainment of the ozone NAAQS. The common theme in these arguments was that the consortium believed that the EPA should control NO<sub>x</sub> instead of VOC because, in their opinion, controlling NO<sub>x</sub> is the most scientifically valid and the most effective strategy for achieving long term ground-level ozone attainment. The consortium's specific arguments are summarized and addressed in sections II.C.1.(b) through (f) of this document. An overview of the EPA's response to this group of arguments is presented below before discussion of the specific arguments.

The EPA believes that the present policy, which focuses on control of both NO<sub>x</sub> and VOC, reflects the latest knowledge on factors affecting ozone formation and the technical feasibility of controls. The present policy, which relies on a combination of national, regional, and local control strategies, has been effective in improving ozone attainment and will achieve further improvements in ozone air quality. The consortium is correct in that scientific studies since the Clean Air Act Amendments of

1990 have more clearly recognized the role of NO<sub>x</sub> and biogenic emissions in ozone nonattainment. The findings of these studies have been factored into the national ozone control policy. The EPA's policy has continuously evolved since the 1970's to recognize improved scientific understanding of this complex issue and will continue to evolve as the science advances. The EPA continues to believe that regulation of both NO<sub>x</sub> and VOC is appropriate and that regulation of VOC through section 183(e) of the Act will contribute to reduced ozone levels. The consortium's position that the ozone NAAQS can be achieved at all locations by NO<sub>x</sub> control alone is based, in part, on a misunderstanding of the ozone formation mechanism in urban air.

a. Background: The current ozone control policy.

Unlike other criteria pollutants, ozone is not directly emitted into the air. Ozone forms in the air when NO<sub>x</sub> and VOC react in a complex set of reactions in the presence of sunlight and heat. The ozone reactions are initiated by the breakdown of nitrogen dioxide by sunlight and subsequent reaction with oxygen. In the absence of VOC, an equilibrium exists between NO<sub>x</sub> and ozone, by which ozone is consumed in the series of photochemical reactions soon after formation. This equilibrium prevents the buildup of high concentrations of ozone in the air. Introduction of VOC

disrupts this equilibrium (i.e., disrupts the reactions that scavenge ozone), thus resulting in accumulation of high concentrations of ozone.

The EPA's ozone reduction policy is to control both NO<sub>x</sub> and VOC emissions. The EPA's policy is consistent with recent scientific studies and with explicit statutory directives to reduce both VOC and NO<sub>x</sub>. Ozone control is a complex problem that must address a number of factors, including meteorological conditions, the relative concentrations of NO<sub>x</sub> and VOC in the air, and the proximity of emission sources to one another. The EPA's policy recognizes that NO<sub>x</sub> control is an effective means for reducing ozone. The EPA's policy also recognizes that VOC control, with or without NO<sub>x</sub> control, is essential or beneficial in many areas for reducing peak ozone concentrations. The EPA believes that its ozone reduction policy is a scientifically valid strategy and that the consortium has mischaracterized the EPA's ozone policy and the past results of the policy.

Several of the comment letters implied that national standards for VOC are the only component of the EPA's policy. This implication is incorrect. The section 183(e) regulations are just one part of a reasoned ozone control plan consisting of national, regional, and local controls. First and foremost, ozone attainment is a State

responsibility. States are responsible for designing control strategies for each nonattainment area in their jurisdiction. The strategies must consider local conditions, including contribution of biogenic VOC emissions, in determining an appropriate mix of NO<sub>x</sub> and VOC controls and the level of control needed. States have developed emission regulations to achieve emission reductions necessary to demonstrate attainment through modeling studies. Multi-State planning zones in several regions of the country are being established to develop coordinated strategies to address interstate transportation of pollution. The Act also requires that State plans contain provisions that prevent sources from contributing significantly to nonattainment or maintenance of attainment in other States.

The State and Regional plans are supplemented by Federal measures to reduce emissions for certain source categories. Federal programs may address source categories that are more efficient to regulate nationally than on a State-by-State basis. States rely on these reductions from the Federal measures in conducting their atmospheric modeling for control strategy development and attainment demonstrations. Examples of Federal VOC control measures include mobile source controls under title II of the Act, new source performance standards (NSPS), the marine vessel

loading rule, and the consumer and commercial product regulations under section 183(e) of the Act. Federal NO<sub>x</sub> controls include regulations for mobile sources, NSPS, and acid rain controls on utility boilers. Section 183(e) standards, therefore, are but one element of a coordinated Federal and State program for ozone control.

Recent regional ozone modeling studies over the 37-State region of the eastern United States have shown that additional emission reductions of both NO<sub>x</sub> and VOC will be needed beyond the currently applicable State and Federal controls. The study was conducted by the Ozone Transport Assessment Group (OTAG), which included representatives of the 37 easternmost States, the EPA, and the public -- in total, more than 700 public and private sector stakeholders. The OTAG States recommended in July 1997 that the EPA continue to adopt and implement stringent national control measures for a number of VOC emission sources, including consumer and commercial products.

b. Effectiveness of a national volatile organic compound control strategy. The consortium claimed that VOC control is ineffective and should be abandoned because the policy of controlling VOC has not achieved ozone attainment in all areas of the country. The consortium further maintained that, in some cases, VOC controls are counterproductive and will increase ozone formation.

The EPA disagrees with the conclusion that VOC control is ineffective. Past control strategies have improved air quality. Ozone trends data show that reductions in peak ozone concentrations are occurring across the country. Monitoring data from more than 700 sites show that composite averages of the second highest maximum 1-hour ozone concentrations have shown a clear, steady, downward trend over the past 10 years. These downward trends apply also to the number of daily exceedances of the standard. Since historically the control policies placed greater reliance on VOC control, the trend of ozone reductions confirms that VOC control has been effective in many areas of the country.

Failure to obtain universal attainment is due to a number of factors. Some of these factors include the underestimation of VOC inventories and the inadequate consideration of the role of biogenics and the transport of ozone and NO<sub>x</sub>. Even with these limitations, many areas of the country have achieved attainment or have improved ozone air quality measurably. With recent enhancements to the policy to better address the local impacts of biogenics and pollutant transport, future control strategies should continue to improve this trend.

The EPA also disagrees that VOC controls are counterproductive. The consortium's position is based on the fact that some species of VOC can reduce ozone under

some conditions. Controlling these compounds, therefore, could conceivably increase ozone in certain circumstances. While the EPA acknowledges that some species of VOC can scavenge ozone, this phenomenon occurs in very limited circumstances (i.e., in relatively clean air, with highly reactive VOC under specific meteorological conditions, and in the presence of very low NO<sub>x</sub>). This phenomenon is not widespread and certainly does not form the basis for a national ozone control policy. For a more detailed response to this comment, see section 2.2.2 of the 183-BID.

c. Recent scientific studies. The consortium charged that the EPA has failed to consider recent scientific studies published since the Clean Air Act Amendments of 1990, and has followed historic control policies which have failed. The consortium claimed that "Rethinking the Ozone Problem," "The Southern Oxidants Study," and other studies addressing the role of NO<sub>x</sub> and biogenic VOC emissions prove that the current ozone reduction policy cannot work. They pointed to elements of these studies as support for their position that NO<sub>x</sub> controls are a better means to achieve ozone attainment than VOC controls.

The EPA believes that the current ozone strategy of controlling both VOC and NO<sub>x</sub> is scientifically valid and is consistent with recent scientific advances. Ozone control is a complex problem. Over the past 20 years, scientific

understanding of ozone formation mechanisms has continued to evolve and the EPA's ozone strategy has evolved accordingly. While the EPA agrees with some of the specific factual information cited by the consortium from the cited studies, the EPA disagrees with the consortium's conclusions that the proper response is to abandon VOC control altogether in favor of a NO<sub>x</sub>-only control policy. The cited studies show the complexity of the problem, the importance of NO<sub>x</sub> control in certain circumstances, and the importance of regional control strategies to reduce transport problems. But they do not suggest that VOC emission sources should not be controlled. These studies do not change the conclusion that VOC control helps reduce ozone in many circumstances.

Current scientific information shows that VOC reductions will reduce ozone in urban areas and in other areas where there is available NO<sub>x</sub> present. The relative effectiveness of VOC and NO<sub>x</sub> controls will vary from area to area, depending significantly upon VOC/NO<sub>x</sub> ratios in the atmosphere. VOC reductions will help to reduce ozone in all urban areas because VOC/NO<sub>x</sub> ratios vary at different times and places within an urban area. Modeling analyses indicate that a combination of VOC and NO<sub>x</sub> controls is the most effective way to reduce ozone levels in many urban areas. Ozone reductions due to VOC control can also reduce ozone pollution in downwind areas affected by ozone transport.

The EPA agrees with the consortium on several points: (1) that the past control strategies have not produced the level of ozone reductions that were expected; (2) that science has only recently (in the last 10 years) recognized the significance of the contribution of biogenic VOC sources and transport of ozone and NO<sub>x</sub>; and (3) that these studies provide a basis for fine-tuning certain aspects of the current policy. The EPA disagrees, however, that the proper action is to abandon VOC control altogether. The course that the EPA is following is to use improved scientific understanding from these studies to formulate an improved ozone policy. Recent EPA initiatives to improve ozone control strategy development include:

- (1) Improvement of ozone air quality models.
- (2) Collection of more and better air quality data upon which to base strategies (including simultaneous monitoring of ozone, NO<sub>x</sub>, and speciated VOC concentrations).
- (3) Improvement of VOC and NO<sub>x</sub> emission inventories (including biogenic emissions).
- (4) Regional application of ozone air quality models to account for long-range pollutant transport.
- (5) Development of regional ozone control strategies for NO<sub>x</sub>. (For example, a proposed rulemaking at 62 FR 60317 will require States to submit State Implementation Plan

measures to mitigate transport of ozone and emissions of NO<sub>x</sub> across State borders in the eastern half of the country.)

These improvements respond to the consensus of current scientific understanding of ozone formation and control. The EPA expects that its ozone control strategy will continue to evolve as scientific understanding of ozone formation and control improves.

d. Contribution of biogenic volatile organic compounds sources versus anthropogenic sources to ozone nonattainment.

The consortium stated that anthropogenic VOC sources (like consumer and commercial products) are so insignificant compared to biogenic sources that controlling anthropogenic VOC will have no ozone reduction benefit. The consortium claimed that since biogenic sources might contribute as much as 90 percent of total VOC emissions on typical summer days, the only way to achieve the ozone standard is to control NO<sub>x</sub>. The consortium pointed to the conclusions of the "Southern Oxidants Study" that showed that high biogenic emissions in the rural South can lead to exceedances of the ozone standard.

While the EPA agrees that biogenic emissions are indeed a major fraction of total VOC emissions, the contribution of biogenic sources to total VOC emissions on typical summer days will vary depending on local weather conditions and geography. Thus, although biogenic sources could contribute

as much as 90 percent of total VOC emissions on some summer days, this is only true in some locations and is not universally true for all climatic conditions or geographical features.

In addition, the EPA disagrees that it is ineffectual or inappropriate to control anthropogenic sources of VOC. Under the proper conditions, ozone formation occurs rapidly and is affected (among other things) by the proximity of VOC and NO<sub>x</sub> sources. Biogenic VOC generally are less important than anthropogenic VOC because biogenic VOC are emitted predominantly in rural atmospheres with limited amounts of NO<sub>x</sub>, resulting in a limited amount of ozone formation. Moreover, as noted by the consortium, the biogenic VOC, under the right circumstances, tend to scavenge ozone from the atmosphere. Anthropogenic VOC, on the other hand, are usually emitted in the presence of NO<sub>x</sub>, resulting in more ozone formation. Thus, the EPA concludes that anthropogenic VOC generally play a proportionately greater role in ozone formation than does biogenic VOC.

The consortium may also be correct that, in some cases, biogenic VOC can be the predominant precursor in the reactions with NO<sub>x</sub>. For example, in Atlanta, studies have predicted that the complete elimination of man-made VOC would still leave the area in nonattainment. For this reason, control strategies for areas like Atlanta, which

have very high ratios of VOC/NO<sub>x</sub> in the air, will focus on NO<sub>x</sub> reductions. Even in such areas, however, the control of VOC will help reduce ozone formation.

Modeling in Atlanta has shown that VOC controls can help reduce ozone even in NO<sub>x</sub>-limited areas. Because ozone formation is greatly affected by meteorological conditions and source/receptor orientation, ozone formation may be limited by either VOC or NO<sub>x</sub> concentrations at different times and locations within the area. Moreover, modeling results suggest that unless NO<sub>x</sub> controls can be implemented all at once, detrimental effects can occur from piecemeal implementation under some circumstances. Results show that VOC controls could mitigate some undesirable effects in the interim. Thus, even though NO<sub>x</sub> control may be an effective means of reducing ozone levels on many of the worst days in many locations, reduction of VOC emissions is still necessary to reduce peak ozone concentrations under the variety of meteorological and source receptor conditions in urban areas. As previously noted, modeling analyses indicate that a combination of VOC and NO<sub>x</sub> controls is the most effective way to reduce ozone levels in many urban areas.

e. The role of long-range transport of nitrogen oxides in ozone nonattainment. The consortium stated that a VOC control strategy will not work because the transport of NO<sub>x</sub>

will cause downwind exceedances of the ozone standard. The consortium maintained that downwind reactions with biogenic VOC would be sufficient to cause violations and, therefore, control of anthropogenic VOC would be ineffective.

The EPA agrees that the transport of ozone can contribute to ozone nonattainment. The EPA also agrees that additional NO<sub>x</sub> emissions reductions are essential to reduce long range transport problems. Ozone transport has been most problematic and most studied in the eastern States, and plans have been proposed for a regional NO<sub>x</sub> emission reduction strategy. However, the control of transported ozone and NO<sub>x</sub> will not solve the ozone problem universally. Control of VOC beyond current State and Federal VOC control measures will be necessary to achieve attainment in many areas - particularly those with longstanding and serious problems with nonattainment.

Ozone nonattainment can be a function of two components: locally formed ozone and transported ozone. Historically, most control strategies have focused on controlling locally formed ozone by controlling local NO<sub>x</sub> and VOC sources in the immediate vicinity of nonattainment. The Clean Air Act Amendments of 1990 recognized that certain downwind areas receive transported ozone and ozone precursors that can contribute to nonattainment. Many of these areas may be close to violating the standard due to

local emissions even after applying all reasonably available controls, and the additional contribution of transported ozone can lead to periods of nonattainment.

More recently, exhaustive modeling studies of the eastern States by OTAG and others have explored the transport phenomenon. These studies have concluded that control measures mandated by the Act for ozone nonattainment areas will provide ozone reductions in many nonattainment areas. However, some areas will remain in nonattainment, and new nonattainment may arise due to economic growth. The studies predict that regional NO<sub>x</sub> reductions will decrease ozone concentrations across broad regions and will be more effective in reducing long-range ozone transport than will VOC reductions.

The EPA has recognized the role of NO<sub>x</sub> in the ozone transport problem. On November 7, 1997 (62 FR 60317), the EPA issued a proposed rulemaking requiring certain eastern States to adopt NO<sub>x</sub> emission reduction measures as needed to mitigate the transport of ozone and NO<sub>x</sub> across State boundaries. Considering the State-by-State emission budgets, an overall NO<sub>x</sub> emission reduction of 35 percent is targeted for the 23-State region.

The modeling conclusions about the importance of ozone transport does not mean that VOC reductions are not also needed. The OTAG study concluded that attaining the

standard will require local VOC and/or NO<sub>x</sub> controls in addition to the recommended regional NO<sub>x</sub> controls. The OTAG modeling suggested that reduction of VOC emissions will be most effective in and near urban core areas and will be necessary to control the component of locally produced ozone that contributes to nonattainment. The OTAG States recommended national rules for architectural coatings, consumer products, and automobile refinish coatings to help achieve needed VOC reductions.

In conclusion, the consortium is incorrect that the control of anthropogenic VOC emissions is unnecessary to attain the ozone standard. The VOC emitted in close proximity to NO<sub>x</sub> will generally react to form ozone. Depending on the relevant conditions, this ozone may contribute to nonattainment. To achieve and maintain the standard will require a program to address effectively both local and transported ozone. Control of anthropogenic VOC, therefore, will continue to be a vital part of the strategy to reduce ozone pollution, particularly in urban settings.

f. The Environmental Protection Agency's approach in determining the effects of precursor emissions on ozone nonattainment. The consortium asserted that the EPA has misinterpreted the intent of section 183(e) of the Act and, therefore, arrived at an incorrect ozone control strategy. The consortium explained that the EPA's strategy is to

reduce the peak ozone concentration by examining polluted air and determining the level of precursor emissions that must be removed to achieve attainment. The consortium argued that the only appropriate interpretation of section 183(e) of the Act is to determine which precursors can be added to pristine air and at what levels without exceeding the ozone standard. The consortium claimed that this second interpretation would result in a NO<sub>x</sub>-only control strategy. These two interpretations of section 183(e) of the Act are referred to in the comments as the "two sciences" for ozone regulation. The consortium made extensive use of an ozone isopleth chart for one site (Washington, DC) on a specific date to support a number of general conclusions about ozone control.

The consortium's theory is based on the observation that VOC in isolation cannot form ozone. Depending on the existing ratio of VOC to NO<sub>x</sub> in local areas, reducing VOC may have a variety of effects on ozone. Reductions in VOC emissions can increase, decrease, or have no effect on ozone concentration. Therefore, the consortium concluded that a control strategy based on national VOC emissions reductions will not be uniformly effective and is not justified. The correct science, in the opinion of the commenters, is to consider what amount of VOC can be added to pristine air before causing a violation of the ozone standard. Since

ozone is formed only when NO<sub>x</sub> is present, the commenters argued that NO<sub>x</sub> should be the exclusive target for emissions reductions. If NO<sub>x</sub> concentrations are sufficiently low, then no amount of VOC added to the ambient air will cause violation of the ozone standard. The consortium asserted that the EPA has chosen an approach that will never achieve permanent attainment, but rather only a temporary false attainment. The consortium reasoned that as additional VOC is added to an airshed that is in attainment and that contains NO<sub>x</sub>, nonattainment can recur. A control strategy based on control of NO<sub>x</sub> emissions, according to the commenters, would ensure permanent attainment regardless of future VOC levels.

The EPA disagrees that there are two sciences and that the EPA chose the wrong one. One of the purported "sciences" is the present EPA ozone policy of controlling NO<sub>x</sub> and VOC. The other purported "science" is a policy choice (using the same scientific basis as the first science) of controlling only NO<sub>x</sub>. The EPA does not consider the exclusive control of NO<sub>x</sub> emissions to be a practical approach.

The consortium's conclusion that the EPA's goal should be preventing saturation of the air by NO<sub>x</sub> is derived from a misunderstanding of the roles of precursors in ozone formation and a misinterpretation of isopleth charts.

Isopleth charts show the downwind peak 1-hour ozone concentrations as a function of initial concentrations of VOC and NO<sub>x</sub> for an urban area. City-specific charts can be used to estimate the reduction in VOC or NO<sub>x</sub> levels needed to achieve the ozone NAAQS in a specific urban area.

Isopleth charts are generated from computer modeling of an area considering a number of local atmospheric conditions influencing ozone formation. The consortium has inappropriately used one-day, single-location simulations as representing all of atmospheric chemistry. The consortium has overlooked the acknowledged limitations of isopleth diagrams for use in determining control strategies.

The most serious limitation of use of isopleth charts is that the predictions are critically dependent on the initial VOC/NO<sub>x</sub> ratio used in the calculations. This ratio cannot be determined with any certainty because it is quite variable in time and space. Because these isopleth charts are derived using initial VOC/NO<sub>x</sub> ratios in the morning, the charts do not depict the evolution of the emissions as the air mass is carried downwind. The VOC/NO<sub>x</sub> ratio in an urban plume near the city center can change substantially as the air parcel ages and moves downwind. This change occurs because of the photochemical reactions in the air and the addition of other emissions to the plume. The implication of this evolution is that different locations in a large

urban area can show very different ozone sensitivities to VOC and NO<sub>x</sub> controls. The consortium's position does not recognize the dynamic nature of the process and assumes that the composition of urban air remains static.

Unlike the consortium's approach, the EPA's approach recognizes that ozone formation may be limited by VOC or by NO<sub>x</sub> at different times and different locations. Thus, even though NO<sub>x</sub> control may be the most effective means for achieving the standard on many of the worst days in many locations, reduction of VOC emissions is still necessary to reduce peak ozone concentrations under the variety of meteorological and source receptor conditions that occur in urban areas.

## 2. Regulation of attainment areas via national rules.

The consortium contended that section 183(e) authorizes the EPA to implement rules that regulate consumer and commercial products only in nonattainment areas. The consortium also argued that it is inappropriate and unnecessary for the EPA to develop limits for VOC emissions that apply to all attainment and nonattainment areas under section 183(e) of the Act. The commenters stated that the goal of section 183(e) of the Act is to prevent exceedances of the ozone NAAQS and noted that only certain areas of the country, accounting for a small total land mass, exceed the ozone NAAQS. Furthermore, even within those nonattainment

areas, they argued that the EPA should develop a regulatory strategy on a regional basis due to variations in factors affecting ozone formation (e.g., meteorology). Finally, the consortium noted that some ozone nonattainment areas will be able to reach attainment status under present regulations using existing technology to reduce emissions from other sources. Therefore, the consortium's view is that attainment areas and some nonattainment areas do not require regulation under section 183(e) of the Act.

The EPA agrees that the degree of VOC reductions necessary to prevent exceedances of the ozone standard varies regionally. However, it does not agree with the consortium's conclusion that regulations applying to both attainment and nonattainment areas under section 183(e) of the Act are illegal, unnecessary, or inappropriate.

The EPA interprets section 183(e) of the Act to permit the EPA to promulgate rules that apply nationwide. The EPA bases this interpretation both upon the statutory language of section 183(e), and upon the Congressional directive to utilize any system or systems of regulation necessary to achieve the appropriate reductions. In particular, the EPA believes that the transportability of products and the difficulties attendant upon tracking their ultimate place of use compel the nationwide scope of the final rule.

First, the express statutory language of section 183(e) of the Act does not preclude regulation of products in attainment areas. To the contrary, in section 183(e)(2)(A) and in 183(e)(3)(A) of the Act, Congress explicitly directed the EPA to examine VOC emissions "into the ambient air" without restriction regarding whether such air was in attainment or nonattainment areas. Moreover, the EPA believes that no such distinction between attainment and nonattainment areas is appropriate because section 183(e)(2)(A)(ii) of the Act requires the EPA to assess emissions from consumer and commercial products for their "potential to contribute" to ozone NAAQS violations wherever they may occur. Although commenters argued that the "potential to contribute" clause links the VOC emissions only to those products used in nonattainment areas, the EPA believes that the language of the statute compels no such reading and that it would be illogical given that VOC emissions in attainment areas can contribute to nonattainment in adjoining nonattainment areas.

In section 183(e)(3)(A) of the Act, Congress also explicitly granted the EPA broad powers to reduce emissions into the ambient air in order to combat ozone nonattainment. These powers provided that, to meet the objectives of section 183(e), the EPA may, "by regulation, control or prohibit any activity, including the manufacture or

introduction into commerce, offering for sale, or sale of any consumer or commercial product which results in emission of [VOC] into the ambient air." In section 183(e)(4) Congress explicitly provided that to meet the objectives of the provision, the EPA may "include any system or systems of regulation as the Administrator may deem appropriate." The EPA believes that Congress thereby granted the EPA discretion to determine which measures would best obtain reductions and to determine the appropriate geographical scope for such measures. Inherent in this authority is the power to determine that a national rule with nationwide applicability across both attainment and nonattainment areas is the most appropriate means to obtain the requisite reductions.

In addition, section 183(e)(3)(A) of the Act expressly directs the EPA to promulgate regulations that "require best available controls." In accordance with the definition of that term in the statute, the EPA is to consider "technological and economic feasibility, health, environmental, and energy impacts" and is to consider, among other things, "the most effective equipment, measures, processes, methods, systems, or techniques" to obtain the reductions. The EPA believes that Congress, thus, clearly directed the EPA to take into account the relative effectiveness of the available means to obtain reductions,

including controls that would be applicable to all areas or only to nonattainment areas, and to make its determination as to the proper geographic scope of controls based upon appropriate factors. The EPA has determined that national rules that apply nationwide to both attainment and nonattainment areas are the BAC to insure that reductions in VOC emissions occur for certain categories of products.

The EPA has concluded that a national rule is the more effective approach for reducing emissions from consumer products, automobile refinish coatings, and architectural coatings for the following reasons. First, the EPA believes that a national rule is an appropriate means to deal with the issue of products that are, by their nature, easily transported across area boundaries and many are widely distributed and are used by widely varied types of end-users. For many such products, the end-user may use them in different locations from day-to-day. Because the products themselves are easily transportable, a national rule would preempt opportunities for end-users to purchase such consumer and commercial products in attainment areas and then use them in nonattainment areas, thereby circumventing the regulations and undermining the decrease in VOC emissions in nonattainment areas. The EPA, therefore, believes that a national rule with applicability to products, regardless of where they are marketed, is a

reasonable means to ensure that the regulations result in the requisite degree of VOC emission reduction.

Second, the EPA believes that rules applicable only in nonattainment areas would be unnecessarily complex and burdensome for many regulated entities to comply with and for the EPA to administer. The potentially regulated entities under section 183(e) are the manufacturers, processors, wholesale distributors, or importers of consumer and commercial products. For these three product categories, EPA believes that regulations that would differentiate between products destined for attainment and nonattainment areas should adequately insure that only compliant products go to nonattainment areas. For such a rule to be effective, EPA believes that this would necessitate requiring regulated entities to track their products and control their distribution, sale, and ultimate destination for use to insure that only compliant products go to nonattainment areas. The EPA notes that for architectural coatings and consumer products, regulated entities do not currently track or control distribution of their products once they sell them to retail distributors. Although the EPA recognizes that some product lines in some product categories may only be distributed regionally in areas that are already in attainment, the large majority of the product lines will be distributed nationally.

Regulations targeted only at nonattainment areas could, thus, impose significant additional burdens upon regulated entities to achieve the goals of section 183(e).

By comparison, existing State regulations in some instances apply to a broader range of entities, including retail distributors and end users. Given the limitations of section 183(e) as to regulated entities, the EPA believes that regulations applicable to both attainment areas and nonattainment areas is a reasonable means to ensure use of complying products where necessary, while avoiding potentially burdensome impacts and less reliable mechanisms to achieve the goals of section 183(e). Several of the trade associations of the industries for whom the EPA has proposed national rules (i.e., architectural coatings, consumer products, and automobile refinish coatings) have supported national rules that apply to all areas as the most efficient regulatory mechanism from the perspective of marketing and distribution of products. The EPA's consideration of this factor, however, is not meant to imply that it would be inappropriate for States to develop more stringent levels of controls where necessary to attain the ozone standard. Instead, the national standard is expected to reduce the number of States needing to develop separate rules for these categories.

Third, the EPA believes that national rules with nationwide applicability may help to mitigate the impact of ozone and ozone precursor transport across some area boundaries. Recent modeling performed by OTAG and others suggests that, in some circumstances, VOC emitted outside nonattainment area boundaries can contribute to ozone pollution in nonattainment areas--for example, by traveling relatively short distances into neighboring nonattainment areas. The EPA has recognized the potential for VOC transport in the December 29, 1997, "Guidance for Implementing the 1-hour Ozone and Pre-Existing PM<sub>10</sub> NAAQS," concerning credit for VOC emission reductions towards rate of progress requirements. The guidance indicates that the EPA may give credit for VOC reductions within 100 kilometers of nonattainment areas. In addition, the June 1997 recommendations made by OTAG supported the EPA's use of VOC regulations that apply to both nonattainment and attainment areas to implement section 183(e) of the Act for certain products. The particular product categories OTAG cited for national VOC regulations are automobile refinishing coatings, consumer products, and architectural coatings. The EPA believes that regulation of products in attainment areas is necessary to mitigate VOC emissions that have the potential to contribute to ozone nonattainment in accordance with section 183(e) of the Act.

The EPA notes that some commenters asserted that one clause in section 183(e)(3)(A) of the Act compels the conclusion that Congress intended the EPA to regulate consumer and commercial products only in nonattainment areas. That subsection of the Act instructs the EPA to list the products that account for at least 80 percent of the VOC emissions "from consumer or commercial products in areas that violate the NAAQS for ozone." The EPA believes that this clause pertains not to the scope of the regulations that the EPA may choose to impose, but rather to the listing process itself. Thus, the EPA believes that this provision of the statute requires the EPA to regulate the categories of products that account for at least 80 percent of the VOC emissions in nonattainment areas, but does not necessarily control whether the EPA is to regulate such products only in nonattainment areas. Because the EPA has otherwise determined that a national rule with applicability in both attainment and nonattainment areas is the best means to obtain the necessary VOC emission reductions intended by Congress, the EPA believes that the language in question does not preclude that strategy.

Finally, the arguments in this section supporting the EPA's authority and rationale for regulating both nonattainment and attainment areas under section 183(e) of the Act are not intended to imply that the EPA would not

consider using its discretion to develop a control techniques guidelines (CTG) document (which would affect VOC emissions only in nonattainment areas) for a category in lieu of a regulation. The EPA recognizes that patterns of distribution and use will vary among categories of products. Therefore, the EPA intends to use its discretion to determine the most efficient and effective mode of regulation for each of the categories listed for regulation under section 183(e) of the Act.

### III. Administrative Requirements.

#### A. Docket.

The docket is an organized and complete file of all the information considered by the EPA in the development of this rulemaking. The docket is a dynamic file, since material is added throughout the rulemaking development. The docketing system is intended to allow members of the public to readily identify and locate documents so that they can effectively participate in the rulemaking process. Along with the statement of basis and purpose of the proposed and promulgated standards (technical support document submitted at proposal) and the EPA responses to significant comments, the contents of the Docket will serve as the record in case of judicial review (see 42 U.S.C. 7607(d)(7)(A)).

As noted under the "Docket" discussion in the ADDRESSES section of this document, there are four dockets that

contain information considered in these listing determinations. Docket No. A-94-65 contains information considered by the EPA in development of the consumer and commercial products study and the subsequent list and schedule for regulation. Docket No. A-92-18 contains information considered by the EPA in the development of the architectural coatings rule. Docket No. A-95-40 contains information on the consumer products rule. Docket No. A-95-18 contains information on the automobile refinishing coatings rulemaking.

B. Paperwork Reduction Act.

This action does not involve any information collection requirements subject to an Office of Management and Budget (OMB) review under the Paperwork Reduction Act, 44 U.S.C. 3501, et seq.

C. Executive Order 12866.

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the EPA must determine whether regulatory actions are significant and therefore subject to OMB review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to lead to a rule that may:

(1) Have an annual effect on the economy of \$100 million or more, or adversely and materially affect a sector of the economy, productivity, competition, jobs, the

environment, public health or safety, or State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligation of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of the Executive Order, OMB has notified the EPA that it considers this a "significant regulatory action" within the meaning of the Executive Order because it is likely to lead to rules which may meet one or more of the criteria. Accordingly, the EPA has submitted this action to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

D. Executive Order 12875.

To reduce the burden of Federal regulations on States and small governments, the President issued Executive Order 12875 on October 26, 1993, entitled Enhancing the Intergovernmental Partnership. This executive order requires agencies to assess the effects of regulations that are not required by statute and that create mandates upon

State, local, or tribal governments. This action does not create mandates on State, local, or tribal governments. Therefore, the requirements of Executive Order 12875 do not apply to this action.

E. Regulatory Flexibility Act/Small Business Regulatory Enforcement Fairness Act of 1996.

The Regulatory Flexibility Act (RFA) of 1980 (5 U.S.C. 601, et seq.), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), requires the EPA to give special consideration to the effect of Federal regulations on small entities and to consider regulatory options that might mitigate any such impacts. The EPA is required to prepare a regulatory flexibility analysis and coordinate with small entity stakeholders if the EPA determines that a rule will have a significant economic impact on a substantial number of small entities.

The EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final listing action. The EPA has also determined that this listing action will not have a significant economic impact on a substantial number of small entities because this action imposes no requirements. In accordance with the RFA and SBREFA, the EPA has performed the requisite analysis for each of the three rules. A statement of this analysis

accompanies each of the three rules, published elsewhere in today's Federal Register.

F. Unfunded Mandates Reform Act of 1995.

Under section 202 of the Unfunded Mandates Reform Act of 1995 ("Unfunded Mandates Act"), signed into law on March 22, 1995, the EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, of \$100 million or more in any one year. Under section 205, the EPA must select the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires the EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

The EPA has determined that because the final listing action taken today imposes no requirements, it does not include a Federal mandate that may result in estimated costs of \$100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector, in any one year. Therefore, the requirements of sections 202

and 205 of the Unfunded Mandates Reform Act do not apply to this action.

The EPA has determined, for the same reason, that the final listing action taken today does not include any regulatory requirements that might significantly or uniquely affect small governments. Thus, today's action is not subject to the requirements of section 203 of the Unfunded Mandates Act.

G. Submission to Congress and the General Accounting Office.

The Congressional Review Act, 5 U.S.C. 801, et seq., as added by the SBREFA of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing this action and other required information to the United States Senate, the United States House of Representatives, and the Comptroller General of the United States prior to publication of this action in the Federal Register. A Major rule cannot take effect until 60 days after it is published in the Federal Register. This rule is not a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective [insert date of publication in the FEDERAL REGISTER].

H. National Technology Transfer and Advancement Act.

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (the NTTAA), Pub. L. No. 104-113, section 12(d) (15 U.S.C. 272 note), directs the EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices, etc.) that are developed or adopted by voluntary consensus standard bodies. The NTTAA requires the EPA to provide Congress, through OMB, explanations when the EPA decides not to use available and applicable voluntary consensus standards.

This action does not involve any technical standards that would require the EPA consideration of voluntary consensus standards pursuant to §12(d) of the NTTAA. This action does not establish any requirements.

I. Executive Order 13045.

Executive Order 13045 applies to any rule that the EPA determines (1) that the rule is economically significant as defined under Executive Order 12866, and (2) that the environmental health or safety risk addressed by the rule has a disproportionate effect on children. If the regulatory action meets both criteria, the EPA must evaluate the environmental health or safety effects of the planned

rule on children and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the EPA.

This final action is not subject to Executive Order 13045, entitled Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997), because it is not an economically significant regulatory action as defined by Executive Order 12866, and it does not address an environmental health or safety risk that would have a disproportionate effect on children.

Executive Order 13084

Under Executive Order 13084, the EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or the EPA provides to the Office of Management and Budget a description of the prior consultation and communications the agency has had with representatives of tribal governments and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires the EPA to develop an effective process permitting elected and other representatives of Indian tribal governments "to provide

meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities." Information available to the Administrator does not indicate that this action will have any effect on Indian tribal governments.

List of Subjects

Environmental protection, Air pollution control, Consumer and commercial products, Consumer products, Ozone, Volatile organic compound.

August 14, 1998  
Dated

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Carol M. Browner,  
Administrator.

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